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APPLICATION NUMBER: 10/696,069

FILING DATE: October 28, 2003

RELATED PCT APPLICATION NUMBER: PCT/US04/21435

Certified by



Jon W Dudas

Acting Under Secretary of Commerce
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EF 106728815 US

PTO/SB/05 (08-03)

Approved for use through 07/31/2006. OMB 0651-0032
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UTILITY
PATENT APPLICATION
TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.

HT03

First Inventor

POPOVSKY, MICHAEL

Title

CLEANSING PAD

Express Mail Label No.

EF106728815US

2389 U.S. PTO
10/6/99 6069

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO:

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1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. ☒ Applicant claims small entity status.
See 37 CFR 1.27.
3. ☒ Specification [Total Pages 27]
(preferred arrangement set forth below)
- Descriptive title of the invention
 - Cross Reference to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to sequence listing, a table, or a computer program listing appendix
 - Background of the invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 9]
5. Oath or Declaration [Total Sheets]
- a. ☐ Newly executed (original or copy)
- b. ☐ Copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 18 completed)
- i. ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s)
name in the prior application, see 37 CFR
1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76

7. ☐ CD-ROM or CD-R in duplicate, large table or
Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
- a. ☐ Computer Readable Form (CRF)
- b. Specification Sequence Listing on:
- i. ☐ CD-ROM or CD-R (2 copies); or
- ii. ☐ Paper
- c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement of Attorney
(when there is an assignee) ☐ Power of Attorney
11. ☐ English Translation Document (if applicable)
12. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)
(if foreign priority is claimed)
16. ☒ Nonpublication Request under 35 U.S.C. 122
(b)(2)(B)(i). Applicant must attach form PTO/SB/35
or its equivalent.
17. ☐ Other:

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.:

Prior application information:

Examiner:

Art Unit:

For CONTINUATION OF DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☒ Customer Number: 35505 OR ☐ Correspondence address below

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Address

City

Country

PATENT TRADEMARK OFFICE

Telephone

Zip Code

Fax

Name (Print/Type)

MICHAEL ZARRABIAN

Registration No. (Attorney/Agent)

39886

Signature

Date

OCTOBER 28, 2003

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16138 U.S. PTO

PTO/SB/17 (10-03)

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FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT

(\$ 425.00)

Complete if Known

Application Number	
Filing Date	October 28, 2003
First Named Inventor	POPOVSKY, MICHAEL
Examiner Name	
Art Unit	
Attorney Docket No.	HT03

METHOD OF PAYMENT (check all that apply)☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☐ Deposit Account:Deposit Account Number
Deposit Account Name

The Director is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Credit any overpayments☐ Charge any additional fee(s) or any underpayment of fee(s)☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	385.00
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					(\$ 385.00)

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims	1	-20** = 0	X	0
Multiple Dependent	0	-3** = 0	X	0

Large Entity		Small Entity		Fee Description
Fee Code	Fee (\$)	Fee Code	Fee (\$)	
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent
SUBTOTAL (2)				

(\$ 0)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)**3. ADDITIONAL FEES**

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	40.00
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 40.00)**SUBMITTED BY**

(Complete if applicable)

Name (Print/Type)	MICHAEL ZARRABIAN	Registration No. (Attorney/Agent)	39,886	Telephone	310-201-0640
Signature		Date	October 28, 2003		

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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**NONPUBLICATION REQUEST
UNDER
35 U.S.C. 122(b)(2)(B)(i)**

First Named Inventor **POPOVSKY, MICHAEL**

Title **CLEANSING PAD**

Attorney Docket Number **HT03**

I hereby certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing.

I hereby request that the attached application not be published under 35 U.S.C. 122(b).

OCTOBER 28, 2003

Date

Signature

310-201-0640

Telephone number

MICHAEL ZARRABIAN

Typed or printed name

REG. NO. 39,886

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing**.

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant **must** notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

This collection of information is required by 37 CFR 1.213(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Cleansing Pad

By

Michael Popovsky

Yelena Popovsky

5 Susanne Foote

And

Shawna Lassen

Related Application

10 Applicant claims the priority of U.S. Provisional
Application No. 60/484,786, entitled "Soap and wash
sponge", filed on July 3, 2003, which is incorporated
herein by reference.

15 **Field of the Invention**

The present invention relates to cleansing pads and
processes for forming such cleansing pads with a cleansing
composition therein.

20 **Background of the Invention**

Cleansing pads and sponges have been used at home and
in other applications for cleaning purposes such as for
cleansing the human body, cleansing inanimate
bodies/objects and the like. Typically, a user applies a

cleansing compound to a pad or the body to be cleansed, and then the pad is rubbed over the object for cleaning action. The body is then rinsed off the cleansing compound.

5 A variation in the above process has been to create a cleansing pad by placing a cleaning agent such as bar of soap or liquid soap inside a sponge for washing the body in the shower or bath. Such a sponge includes a container forming an envelope for the soap, and openings through to
10 the container interior allowing water access to the soap and the facile exiting of lather for washing purposes. However, such cleansing pads fall apart due to the weight of the soap and the water in the sponge, or leak out soap.

15 Further, in such cleansing pads, because the soap is in a reservoir, the lathering action may be limited because the lather must travel from within the reservoir through the sponge to the surface of the sponge for cleansing the body.

20

Brief Summary of the Invention

The present invention addresses the above shortcomings. In one embodiment the present invention provides a cleansing device comprising a web of fibers,

forming a pad, wherein the pad includes a cleansing agent therein. In one example of manufacturing such a pad, the cleansing agent is initially heated from solid form into liquid form, and distributed essentially throughout one or
5 more portions of the pad in liquid form to substantially coat the fibers in said portions of the pad.

As such, in one version essentially only the exterior of the pad is coated with the cleansing agent. In another
10 version, the exterior of the pad is coated with the cleansing agent and portions of the interior of the pad are impregnated with the cleansing agent such that fibers of the pad are coated with the cleansing agent. In another example, essentially only portions of the interior of the
15 pad are impregnated by the cleansing agent.

After application of the liquid cleansing agent, the pad is then allowed to cool such that the cleansing agent solidifies and remains solid at a desired range above at
20 and above room temperature. Thereafter, in use, the pad is applied for cleaning an object in conjunction with a solvent such as water. The solvent dissolves the solidified cleaning agent into a solution that includes quantities of the solvent and dissolved cleansing agent for

cleansing the object. The pad can be used in this manner multiple times without the need for application of other cleansing agent to the pad. As such, the pad is a self-contained, long lasting product that does not require the
5 user to reapply cleansing agents to the pad with every use.

The present invention further provides apparatuses for processes of impregnating the pads with cleansing agents such as by dipping, soaking, infusion, misting, spraying
10 and the like, such that fibers of the pad are coated with the cleansing agent according to the present invention.

While the apparatus and method has or will be described for the sake of grammatical fluidity with
15 functional explanations, it is to be expressly understood that the claims, unless expressly formulated under 35 USC 112, are not to be construed as necessarily limited in any way by the construction of "means" or "steps" limitations, but are to be accorded the full scope of the meaning and
20 equivalents of the definition provided by the claims under the judicial doctrine of equivalents, and in the case where the claims are expressly formulated under 35 USC 112 are to be accorded full statutory equivalents under 35 USC 112. The invention can be better visualized by turning now to

the following drawings wherein like elements are referenced by like numerals.

Brief Description of the Drawings

5 These and other features, aspects and advantages of the present invention will become understood with reference to the following description, appended claims and accompanying figures where:

10 FIGS. 1A-B show example perspective and cross-section views, respectively, of a cleansing device pad according to an embodiment of the present invention;

FIG. 2 shows a side view of an embodiment of a dipping
15 apparatus for a process of manufacturing a cleansing device pad according to the present invention;

FIG. 3. shows a bottom/top view of an example of the dipping basket in FIG. 3;

20

FIG. 4 shows a side view of an embodiment of another apparatus for a process of manufacturing a cleansing device pad according to the present invention;

FIG. 5 shows a top view of the apparatus of FIG. 4;

FIG. 6 shows a side view of a press in the apparatus
of FIG. 4;

5

FIG. 7 shows a side view of an embodiment of another
apparatus for a process of manufacturing a cleansing device
pad according to the present invention;

10

FIG. 8 shows a top view of the apparatus of FIG. 7;

FIG. 9 shows a side view of a press in the apparatus
of FIG. 7;

15

FIG. 10 shows a side view of an injector in the
apparatus of FIG. 7;

FIG. 11 shows an example of injecting a pad with
cleansing agent according to the present invention;

20

FIG. 12 shows an example of spraying a pad with
cleansing agent according to the present invention; and

FIG. 13 shows a side view of an embodiment of another apparatus for a process of manufacturing a cleansing device pad according to the present invention.

5 Detailed Description of the Invention

Referring to FIGS. 1A-B, in one embodiment the present invention provides a cleansing device 10 comprising a web of fibers 11, forming a pad, wherein the pad includes a cleansing agent 12 therein. In one example of
10 manufacturing the cleansing pad 10 according to the present invention, initially the cleansing agent 12 is heated from solid form into liquid form, and distributed essentially throughout one or more portions of the pad 10 in liquid form to substantially coat the fibers in said portions of
15 the pad 10.

As such, in one version essentially only the exterior of the pad 10 is coated with the cleansing agent 12. In another version, the exterior of the pad 10 is coated with
20 the cleansing agent 12 and portions of the interior of the pad 10 are impregnated with the cleansing agent 12 such that fibers 11 inside the pad 10 are also coated with the cleansing agent 12. In another example, essentially only portions of the interior of the pad 10 are impregnated by

the cleansing agent 12. Example process for impregnating the pad 10 with cleansing agent 12 (e.g., dipping, soaking, infusion, misting, etc.) such that fibers 11 of the pad 10 are coated with the cleansing agent 12 according to the present invention are provided further below.

After application of the cleansing agent 12, the pad 10 is then allowed to cool such that the cleansing agent 12 solidifies and remains solid at a desired range above at and above room temperature. Thereafter, in use, the pad 10 is applied for cleaning an object in conjunction with a solvent such as water. The solvent dissolves the solidified cleaning agent 12 into a solution that includes quantities of the solvent and dissolved cleansing agent for cleansing the object. The pad 10 can be used in this manner multiple times without the need for application of other cleansing agent to the pad. As such, the pad 10 is a self-contained, long lasting product that does not require the user to reapply cleansing agents to the pad with every use.

In one example, the pad 10 comprises a synthetic sponge and/or natural sea sponge that is infused/layered/dipped etc., with a cleansing agent 12 or

compound such as soap, as described by example further below. It is to be understood that in this description, sponge and soap are used only as examples of the pad 10 and cleaning agent 12, respectively. Therefore, the present
5 invention is not limited to such examples.

The sponge 10 can be internally infused and/or externally coated with the soap 12. In another example, the sponge 10 comprises, e.g., a polysynthetic porous
10 material, a naturally occurring sea sponge, etc. The synthetic sponge 10 can be anti-bacterially treated to prevent the growth of bacteria once the sponge becomes moist. Synthetic colorant can be applied to the sponge 10 as desired. Other colorants may include food color, MICA,
15 cosmetic MICA, cosmetic dye, minerals, spices and herbs.

In use, application of water and applied pressure creates lather from the soap 12 that was impregnated or coated in the sponge 10. For example, the user places the
20 sponge 10 under or in water, and applies pressure with hand whereby a foamy lather will ensue from the water dissolving the soap 12. Then the sponge 10 can be applied directly to human body or other objects for washing. After washing, the user slightly squeezes the sponge 10 to wick away

excess water and sets it aside, or hangs with a loop-clamp manually attached to sponge, for the sponge 10 to dry.

In one example version, the loop-clamp comprises a plastic loop approximately 2 inches in length ending in a metal

5 flat nosed clamp. The user squeezes the clamps metal with fingertips and attaches to the sponge (e.g., sponge ball or dye cut).

The sponge 10 can be used in this manner multiple
10 times without the need for application of other soap to the sponge 10. As such, the sponge 10 is a long lasting product that does not require the user to reapply soap to the sponge with every use. In one example, with 6 Oz. soap impregnated in the pad 10, the pad 10 can be used thirty
15 times once a day for about 10 to 15 rubs per path. In another example, with 7 Oz of soap impregnated in the pad 10, the pad 10 can be applied for thirty day, once a day, wherein approximately 0.2 to 0.3 Oz of soap in the pad 10 are used per application.

20

In one example, the soap base may contain 100% natural soap without detergents/surfactants/sulfates. In another example, an extra clear base is used which has a very small amount of detergent. Other example compounds that may be

included in the soap 12 include one or more of the following in selected quantities: Saponified Vegetable Oils (mainly coconut), Glycerine (kosher, of vegetable origin), Purified Water, Moisturizer, Emulsifier, etc.

5

Other natural and/or synthetic cleansing agents/compounds besides soap which can be applied to the pad 10 in the following example (and other) processes, and manufacturing apparatus, according to the present

10 invention, maybe utilized.

Referring to **FIG. 2**, an embodiment of an apparatus 100 for manufacturing the cleansing device 10 according to the present invention is shown. The cleansing agent 12, such as soap that is in solid form at e.g. room temperature, is heated to about 150 to 200 °F and maintained in liquid form in a soap vessel 102 by electric or gas burning heating elements 104. Alternatively, the soap 12 can be heated into liquid elsewhere and transferred to the vessel 102 via a pipe 106. One or more sponges 10 are placed in a slotted basket 108 suspended by a support 109, wherein the basket 108 is lowered into the liquid soap 12, such that the sponges 10 are submerged in the liquid soap 12 and allowed to absorb the liquid soap 12.

The duration of submerging the sponges 10 can be varied to control the amount of liquid soap 12 absorbed by the sponges 10. For example, a short duration for
5 submerging the sponges 10 in the liquid soap 12 essentially coats only the exterior of the sponges 10 with the liquid soap 12. Longer periods of submersing the sponges allows coating of the interior fibers of the sponges 10 as well. Other factors that can be varied to control the amount of
10 coating of the fibers in the pads (e.g., sponges) 10 include varying viscosity of the liquid soap 12, the porous nature of the pads 10, the material of the pads 10, etc. For example, larger pores of the pad 10 soak up more liquid soap, whereas smaller/tighter pores of the pad 10 allow for
15 less liquid soap to be soaked up.

Alternatively, in the above process the sponges 10 are squeezed between upper and lower squeezing plates 110, 112 in the basket 108, and the pressure is slowly released for
20 the sponges 10 to absorb the liquid soap 12 while submerged therein, to coat the fibers inside each sponge 10. When the pressure is released, each sponge 10 holds the absorbed liquid soap 12 therein. In either case, the amount of

liquid soap 12 is pre-measured into the vessel 102 where the sponges 10 are submerged.

Then, the basket 108 is raised via the support 109 to
5 take the soaked sponges 10 out of the liquid soap 12 and the sponges 10 are allowed to cool for the liquid soap 12 to solidify therein, and complete formation of the processed cleansing pads (processed pads) 10.

10 As shown by example bottom view in FIG. 3, the basket 108 can be a flat bottomed, open slotted basket which holds several pads 10. The sides 114 of the basket 108 are equal in height and length to the walls 105 of the soap holding/warming vessel 102. The basket 108 along with the
15 pads 10 are immersed in the liquid soap 12 in the vessel 102, wherein the pads 10 will remain floating, but in an even fashion, as the surrounding area around each pad 10 allows little movement. Application of selected amount pressure to the pads 10 via the plates 110, 112, allows
20 measured absorption of the liquid soap 12 by the pads 10 when the pressure is released.

When the basket 108 is raised out of the vessel 102, excess liquid soap 12 drips off the pads 10. In one

example, each pad 10 retains e.g. about 1 to 8 oz. of liquid soap 12. This amount can be selected by controlling/measuring by the temperature/viscosity of the liquid soap 12.

5

The basket 108 is then transferred to a drying/cooling area for a specified duration of time for the liquid soap 12 to solidify in the pads 10 based on the selected characteristics of the soap 12. Other methods of dipping/submerging the pads 10 are possible within the scope of the present invention.

In one example, a pad 10 can be a sponge 4 ½ inches in length/width that is dipped/submerged into colored, plain opaque or clear liquid cleansing agent 12, wherein the cleansing agent 12 cools to a solid form on the exterior and/or interior of the pad 10. The pad 10 and cleansing agent 12 can be selected such that the processed pad 10 is suitable for various applications such as human bathing or washing objects of any sort such as dishes, appliances, surfaces, vehicles, etc. The processed pads 10 can also be scented with oils fragrance, oils, etc. as desired. .

Referring to **FIGS. 4-6**, an embodiment of another apparatus 200 for manufacturing the cleansing device 10 according to the present invention is shown. As shown in **FIG. 4**, the cleansing agent 12, such as soap is heated to
5 about 150 to 200 °F and maintained in liquid form in a soap vessel 202. One or more sponges 10 are placed in holding caps 204 on a table 206.

As shown in the top view of the apparatus 200 in **FIG. 5**, liquid soap 12 is transferred into each holding cap 204
10 via respective transfer tubes 208 from the vessel 202 by the action of a pump 210. A dosimeter 203 allows control of the amount of liquid soap 12 that is transferred to each holding cap 204 via the corresponding transfer tube 208
15 from the vessel 202.

As shown in **FIG. 6**, a press 212 such as an arbor press, when lowered, compresses the sponge 10 in each holding cap 204, wherein thereafter slow release of
20 pressure from the sponges 10 allows each sponge 10 to absorb liquid soap 12 from the respective holding cap 204. Then the sponges 10 are removed from the holding caps 204 and allowed to cool/dry in a similar fashion described above for the liquid soap 12 to solidify.

The press 212 includes press plates 213 that correspond to the holding caps 204. The press plates are attached to a support 215 that slides up and down a shaft 217 by rotary action of a lever 219 as shown by arrow 221. The lever 219 can be spring loaded to resist downward motion of the press plates 213 towards the holding caps 204.

10 The temperature/viscosity of the liquid soap 12, the amount of compression of the sponges 10, the composition of the sponges 10, the amount of liquid soap 12 in each holding cap 204 and pressure from the pump 210, are among controllable parameters that determine the characteristics of the processed sponges 10. The sponges 10 can be placed into, and removed from, the holding caps 204 manually or by an automated process.

Further, the press 212 can be operated manually or by an automated process. In one example, when a sponge is compressed in holding cap 204, the clearance between the corresponding press plate 213 and bottom of the holding cap 204 is about 1.5 inches. The table 206 can be 30 inches

high and have a 40 inch by 40 inch top surface for supporting the holding caps 204 and the press 212.

Referring to the apparatus 300 in **FIGS. 7-10**, in a
5 variation of the above apparatus 200, an infusion process is used to infuse liquid soap 12 into the sponges 10 within holding caps 204. As shown in the side view and top view of the apparatus 300 in **FIGS. 7 and 8** respectively, the transfer tubes 208 are connected from the vessel 202 via
10 the dosimeter 203 to injectors 302 (e.g., hollow needles) that are installed on the support 215 of the press 212.

When the press 212 is lowered (**FIG. 9**), the injectors 302 are inserted into sponges 10 in respecting holding caps
15 204. Then the liquid soap 12 is pumped into the sponges 10 with the injectors 302 for infusion therein.

In addition to the infusion, optionally the sponges 10 may be compressed by the press 212, as described above,
20 wherein slow release of pressure from the sponges 10 allows each sponge 10 to further absorb liquid soap 12 from the injectors 302. Then the injectors 302 are withdrawn from the sponges 10 by raising the press support 215, and the sponges 10 are removed from the holding caps 204 and

allowed to cool/dry in a similar fashion described above
for the liquid soap 12 to solidify.

The temperature/viscosity of the liquid soap 12, the
5 optional amount of compression of the sponges 10, the
composition of the sponges 10, the amount and pressure of
liquid soap 12 from each injector 302, are among
controllable parameters that determine the characteristics
of the processed sponges 10.

10

As shown by example in **FIG. 11**, each injector 302 has
several openings 304 thereon, large enough to release the
liquid soap 12 into each sponge 10 in a spread. **FIG. 11**
shows an example injector 302 partially inserted into a
15 sponge 10 on a holding cup 204. Further, more than one
injector 302 can be connected to the press 212 for
insertion of multiple injectors 302 into each sponge 10,
resulting in faster and/or better infusion/distribution of
liquid soap 12 into each sponge 10. In one example, an
20 injector 302 is about 4 inches long, about 0.07 inches in
inner diameter, with about 15 openings on its sidewalls.

In another embodiment, shown in **FIG. 12**, instead of
injectors, spraying nozzles 400 are used to spray liquid

soap 12 onto the exterior of the sponges 10. The amount of sprayed liquid soap 12, the spray pressure and the viscosity/temperature of the liquid soap 12 and the material of the pads/sponges 10, are among parameters that
5 can be adjusted to control amount of liquid soap 12 absorbed by the sponges 10 and how far the liquid soap 12 travels into the interior of the sponges 10. Further, each sponge 10 can be first compressed, and then sprayed, with decompression during or after spraying, to control the
10 amount of liquid soap absorbed by each sponge 10.

Referring to **FIG. 13**, in another example infusion/impregnation apparatus 500 according to the present invention, a conveyor belt 502 leads pads 10 into a
15 clamping system 504 in step A. Then in step B, each pad 10 is clamped off the belt 502 using a pair of clamps 506 (e.g., one clamp from above and one clamp from below). In step C, the clamped pad 10 is then side injected with an injector 508 (e.g., injector 302 in FIG. 10) with preheated
20 liquid soap 12 from a vessel 510 via tubing 512 by the action of a pump 514 and dosimeter 516.

As shown by example in FIG. 10, each injector has large enough openings to release the liquid soap 12 into

each pad 10 in a spread, wherein the liquid soap 12 is maintained at a viscosity/temperature sufficient to prevent leakage out of the pad 10 due to gravity.

5 Optionally, the clamps 506 may compress the pads 10, wherein slow release of pressure from the pads 10 allows each pad 10 to further absorb liquid soap 12 from the injector 508. Then the injector 508 is withdrawn from the pad 10.

10 After the pad 10 has been injected, optionally it is moved to a misting system where it is misted/spayed with liquid soap (e.g., loz) by a nozzle 518 (e.g., nozzle 400 in FIG. 12), in step D.

15 The liquid soap 12 is fed to the nozzle 518 from the vessel 510 via tubing 522 by action of a pump 524 and dosimeter 526. The misted pad 10 is then dropped back onto another conveyer belt 528 in step E and taken off to a
20 nearby drying rack to dry/cool as described above in step F.

 The temperature/viscosity of the soap, the amount of compression of the pads, the composition of the pads, the

amount and pressure of liquid soap each injector and pump pressure, are among controllable parameters that determine the characteristics of the processed pads.

5 The above processes and apparatuses accommodate various pads 10 such as sponge comprising natural sea sponge and synthetic materials such as polyester, cotton, nylon etc. Preferably the pads are porous. The above processes and apparatuses accommodate various cleansing
10 agents that are in solid form around a first ambient temperature (e.g., room temperature) and turn into liquid form when heated to another temperature.

 In one example, a processed pad 10 according to the
15 present invention provides the ability to hold the soap 12 for up to one month on an every day usage. The user has an all-in-one soap impregnated sponge instead of separate wash cloth/sponge and soap.

20 The material of the pad 10, the amount of cleansing agent 12 in the processed pad 10, the characteristics of the cleansing agent 12, the process of impregnating the pad 10 with the cleansing agent 12 are among factors that can be selected for desired characteristics such as number of

times the processed pads 10 can be reused, the application, etc.

Other pad materials may include all synthetic sponge
5 materials, woven and non-woven materials, all natural including cotton and loofah based. Further, a scenting process may include use of fragrance oils, essential oils, perfumes, herbs and spices.

10 Other options for cleaning agent 12 include PA-8s-sodium octane sulfinite liquid or AS-90 beads sodium olefin sulfinate or c14-16-powder agent, for rolling on sponge. More additives to the soap base include shea butters, almond oil, clays, cocabutters. Other melting temperatures
15 for the soap can be e.g. 130-150 °F, wherein solidification starts at about 120 °F. For different size pads, amount of soap used varies. For example, for example: 1oz. for small sponges, 4oz. for medium sponges, 7-8ozs. for large sponges, etc. Further, different amounts of soap in one
20 sponge can last for different number of uses. For example, 7oz for up to 30 days, once per day; 4oz for up to 2 weeks, once per day; and 1oz for up to 1 to 2 weeks, once per day.

Many alterations and modifications may be made by those skilled in the art without departing from the spirit and scope of the invention. Therefore, it must be understood that the illustrated embodiment has been set forth only for purposes of example and that it should not be taken as limiting the invention as defined by the following claims. For example, though in the example in the above description the pad is impregnated with a cleansing agent, other agents instead of, or in addition to, can be used to impregnate the pad.

The words used in this specification to describe the invention and its various embodiments are to be understood not only in the sense of their commonly defined meanings, but to include by special definition in this specification structure, material or acts beyond the defined meanings. Thus if an element can be understood in the context of this specification as including more than one meaning, then its use in a claim must be understood as being generic to all possible meanings supported by the specification and by the words itself.

The definitions of the words or elements of the following claims are therefore, defined in this

specification to include not only the combination of elements which are literally set forth, but all equivalent structure, material or acts for performing substantially the same function in substantially the same way to obtain substantially the same result. In this sense it is therefore contemplated that an equivalent substitution of two or more elements may be made for any one of the elements in the claims below, or that a single element may be substituted for two or more elements in a claim.

10

Insubstantial changes from the claimed subject matter as viewed by a person with ordinary skill in the art, now known or later devised, are expressly contemplated as being equivalent within the scope of the claims. Therefore, obvious substitutions now or later known to one with ordinary skill in the art are defined to be within the scope of the defined elements.

15

The claims are thus to be understood to include what is specifically illustrated and described above, what is conceptually equivalent, what can be obviously substituted and also what essentially incorporates the essential idea of the invention.

20

What is claimed is:

1. A cleansing pad comprising:

(a) a web of fibers forming a pad; and

5 (b) a solid cleansing agent distributed substantially

throughout said

pad in a quantity sufficient for multiple uses of the pad

in conjunction with a solvent that dissolves the solid

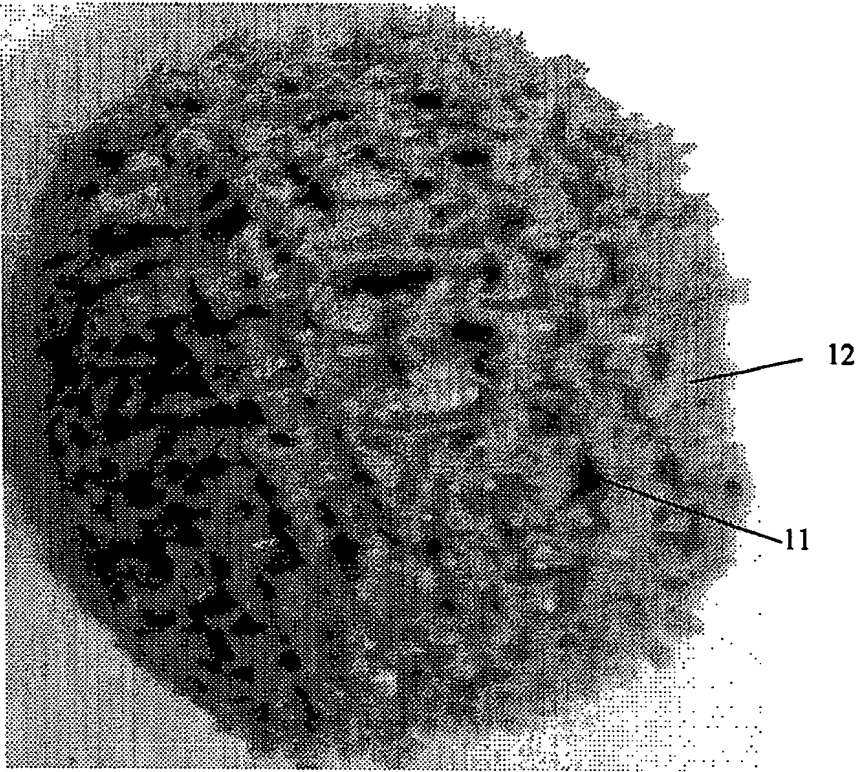
cleansing agent for cleansing purposes.

10

Abstract

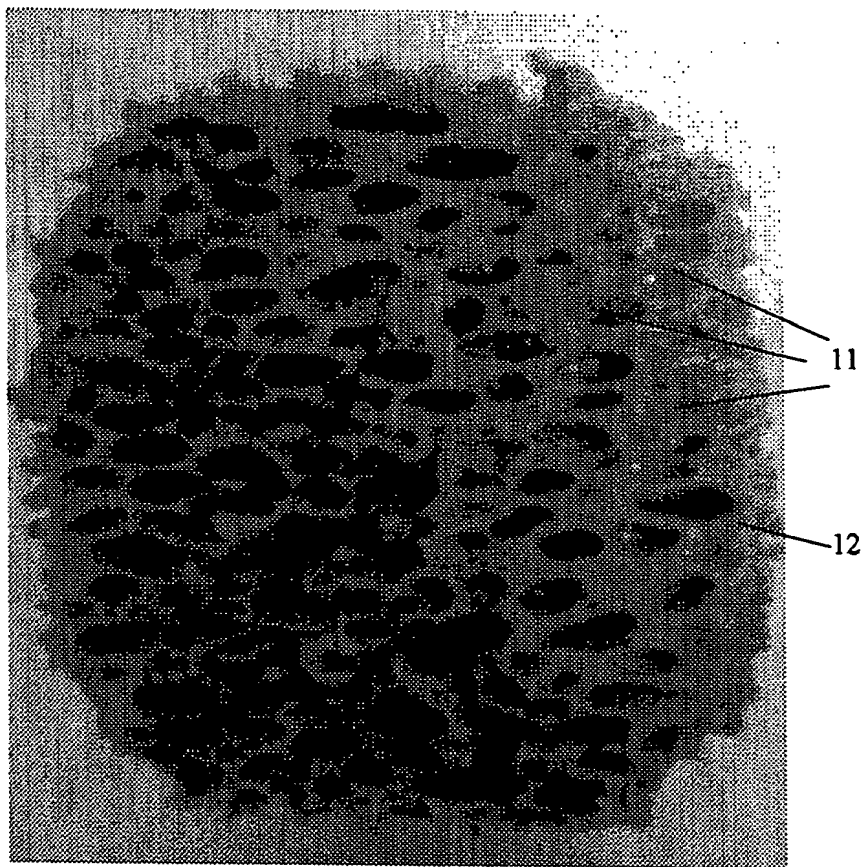
A cleansing device is made of a web of fibers, forming a pad, where the pad includes a cleansing agent therein.

5 In making the cleansing pad, the cleansing agent is initially heated from solid form into liquid form, and distributed essentially throughout one or more portions of the pad in liquid form to substantially coat the fibers in said portions of the pad. After application of the liquid
10 cleansing agent, the pad is then allowed to cool such that the cleansing agent solidifies and remains solid at a desired range above at and above room temperature. Thereafter, in use, the pad is applied for cleaning an object in conjunction with a solvent such as water. The
15 solvent dissolves the solidified cleaning agent into a solution that includes quantities of the solvent and dissolved cleansing agent for cleansing the object. The pad can be used in this manner multiple times without the need for application of other cleansing agent to the pad.
20 As such, the pad is a self-contained, long lasting product that does not require the user to reapply cleansing agents to the pad with every use.



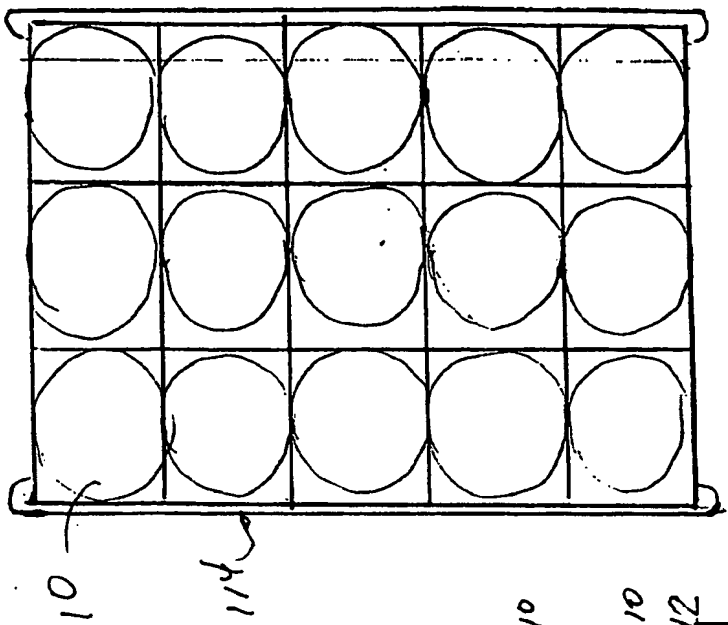
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FIG. 1A



10

FIG. 1B



↑ 108

FIG. 3

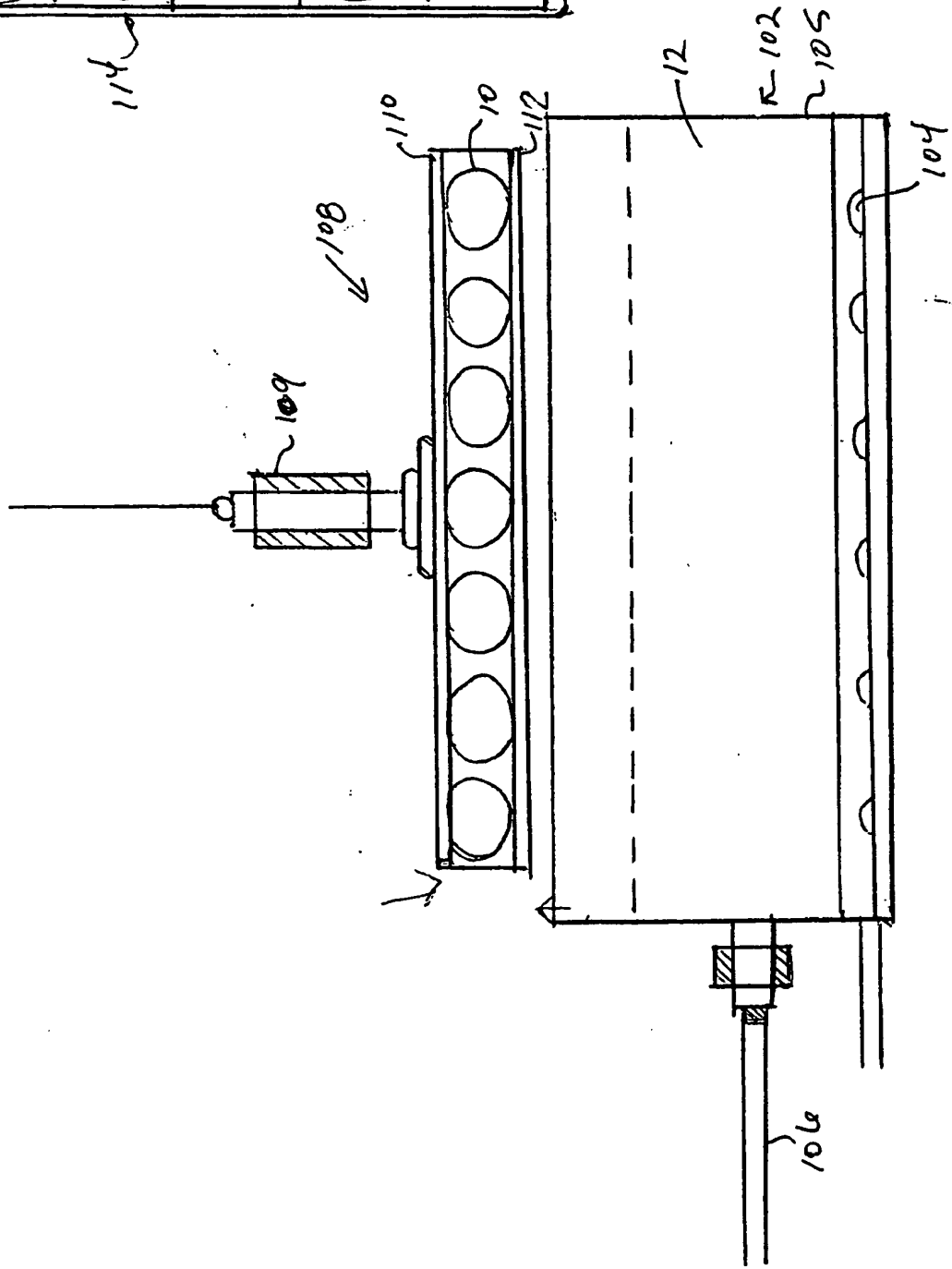
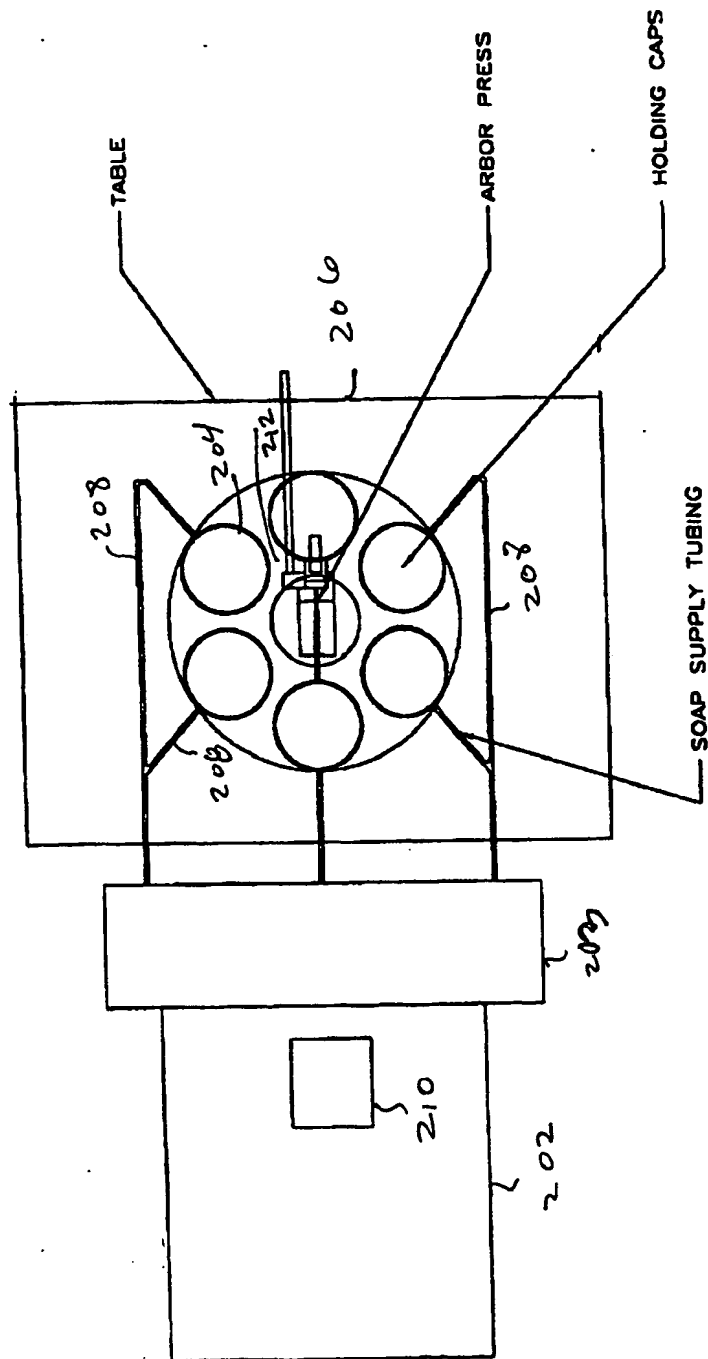
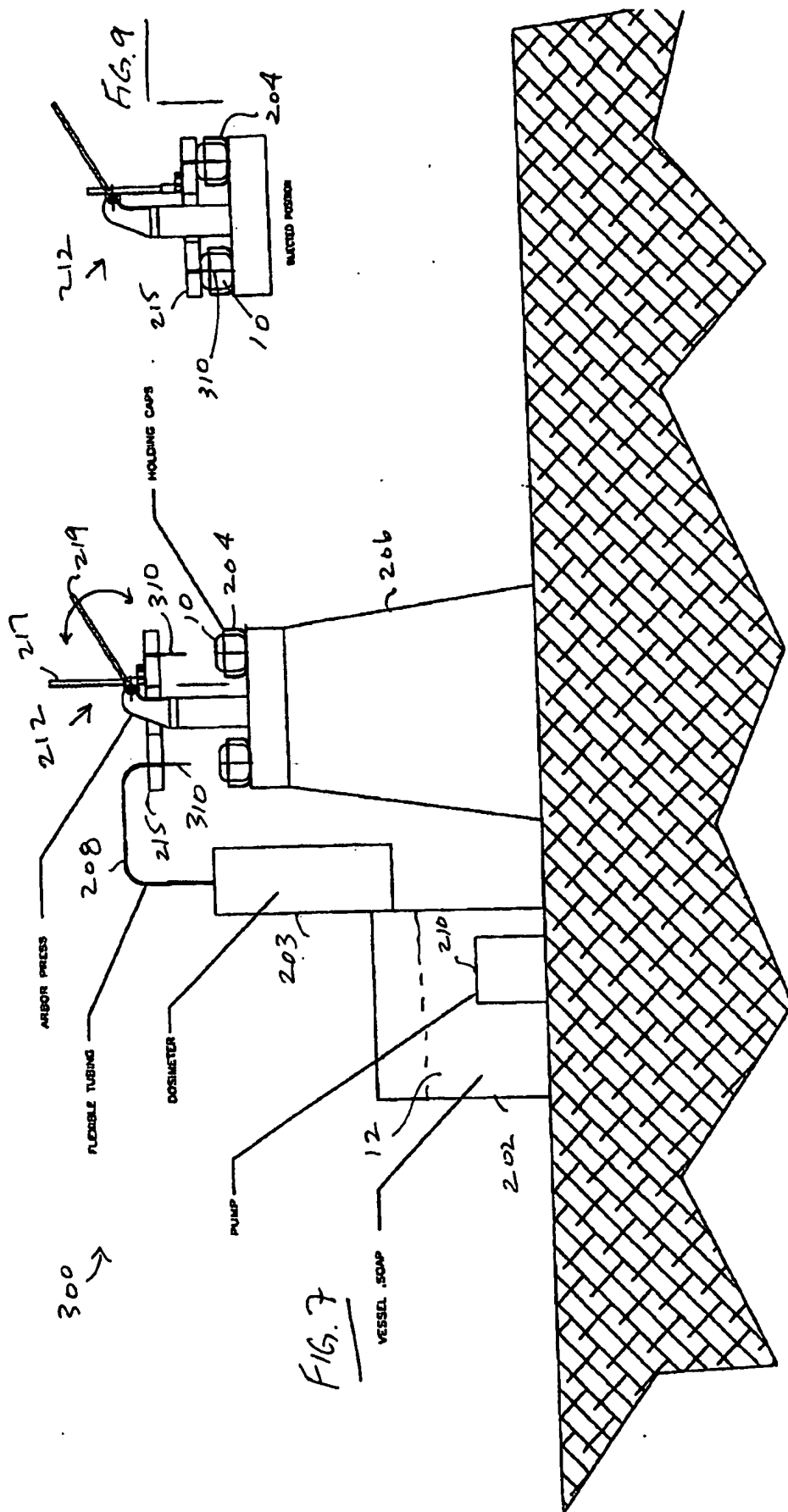


FIG. 2

100



200



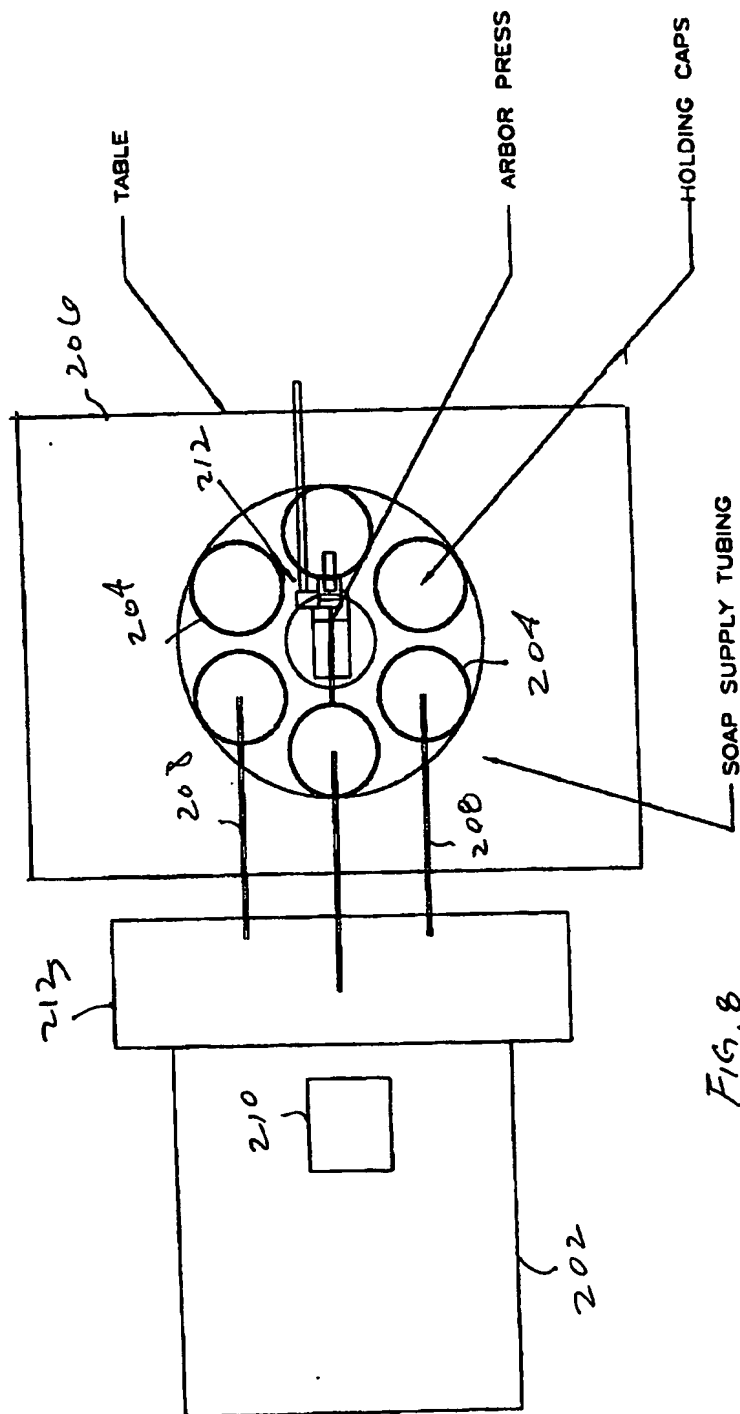
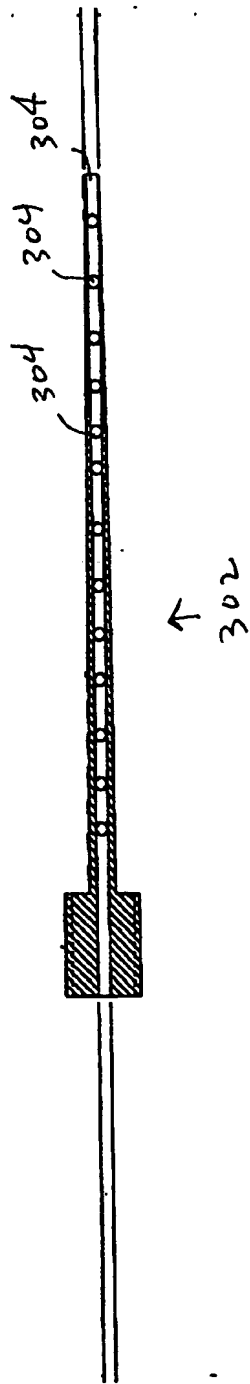


FIG. 8



NEEDLE FIG. 10

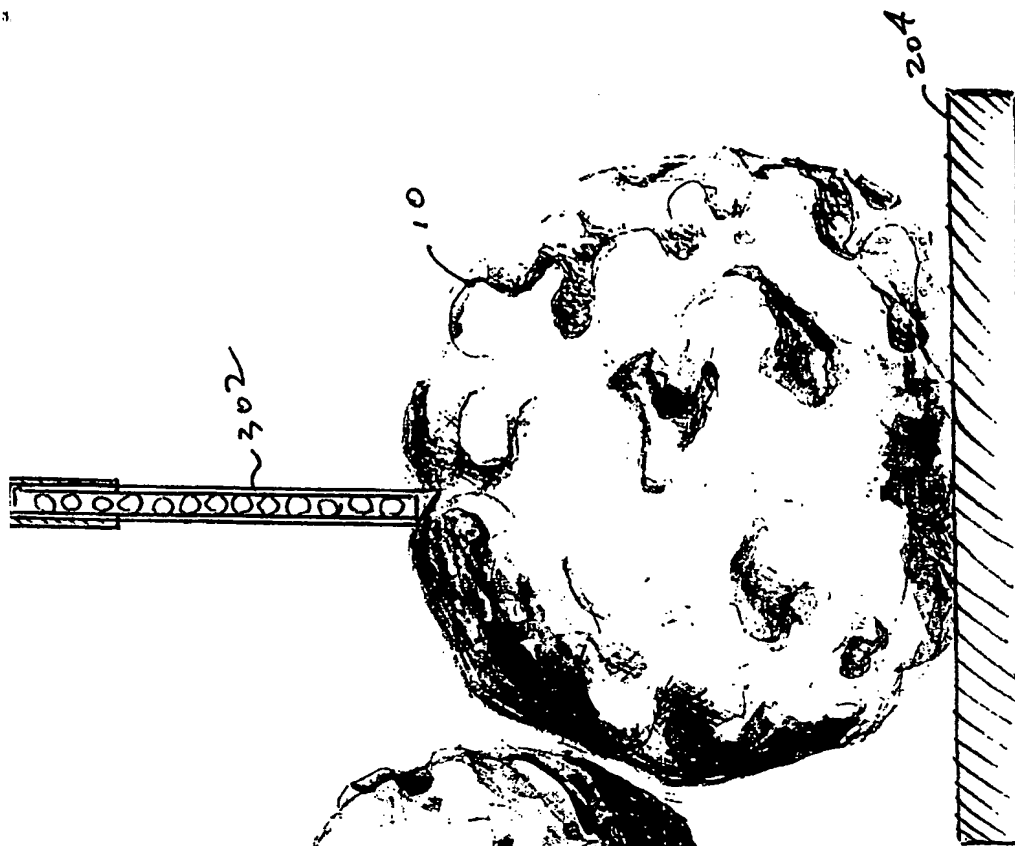


FIG. 11

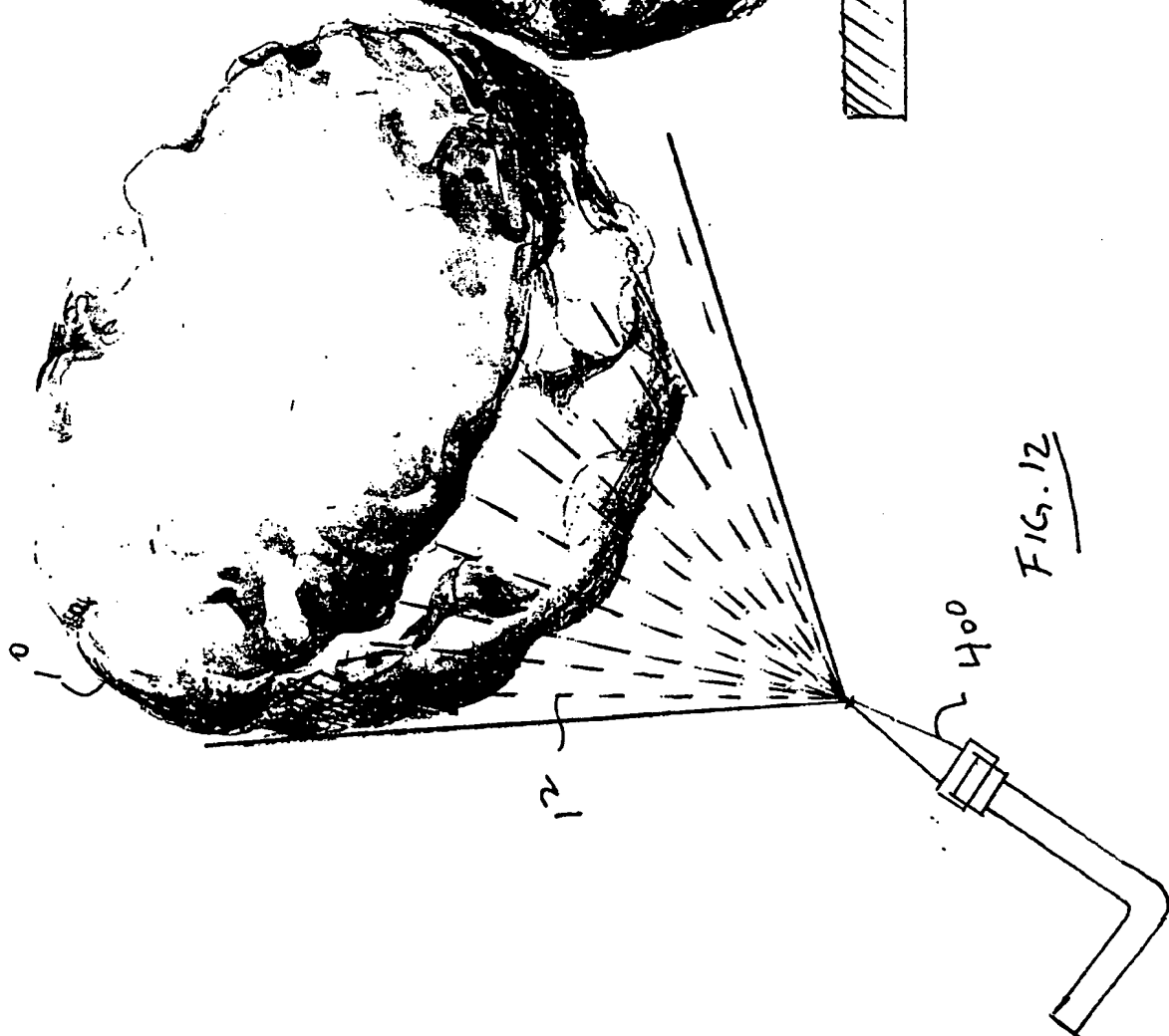


FIG. 12

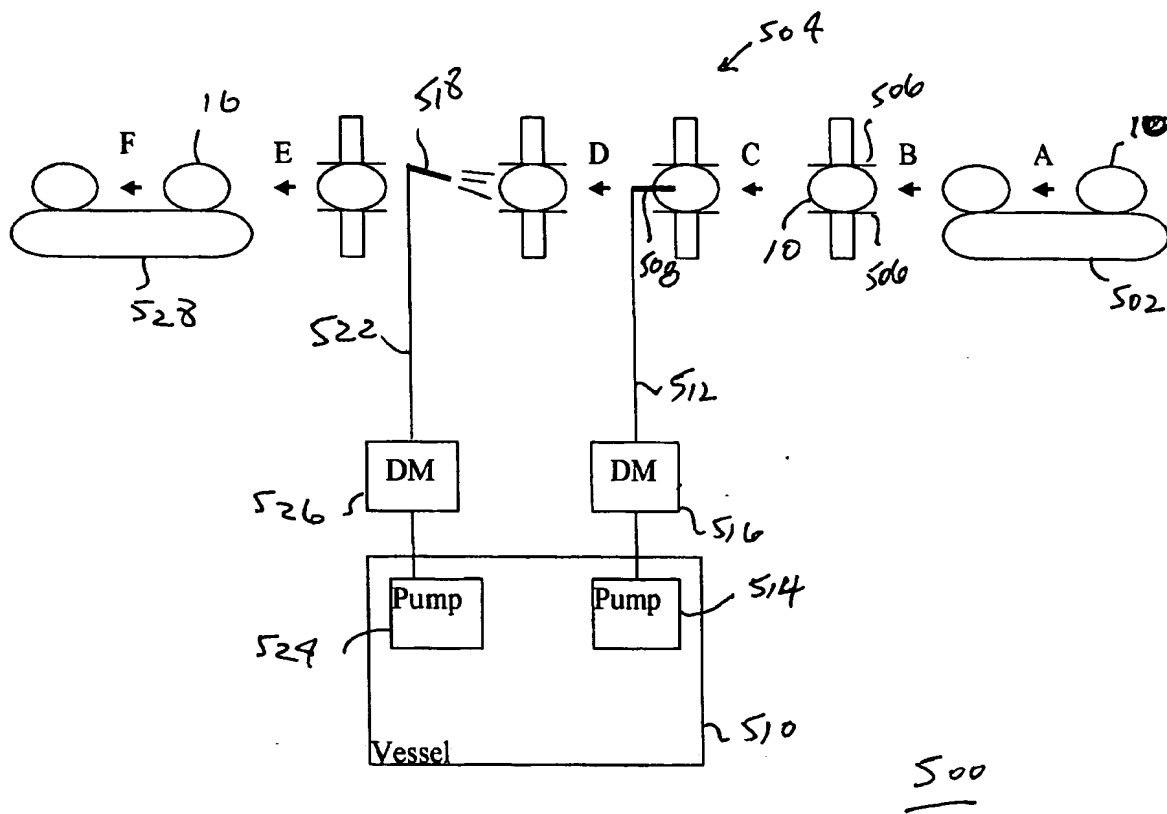


Fig. 13